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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,138	03/27/2001	Atsuhiko Yoneda	8373.234US01	2609

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EXAMINER

CUEVAS, PEDRO J

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/818,138	YONEDA ET AL.	
	Examiner	Art Unit	
	Pedro J. Cuevas	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 May 2003.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1 and 6-8 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1 and 6-8 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 and 6-8 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,351,050 to Coles in view of U.S. Patent No. 6,049,153 to Nishiyama et al., further in view of U.S. Patent No. 5,268,609 to Sakashita et al.

Coles disclose the construction of an electrical power assisted steering system including an electric motor (50) comprising:

an annular outer stator (400) having circumferentially arranged stator windings (column 4, lines 26-27) of nine or a multiple of nine salient poles (401) radially arranged at an equal pitch, each of said salient poles having respective one of said stator windings wound therearound, three or a multiple of three poles of said stator windings being connected in series to provide three phases (Coles, Figure 3), each of said three phases comprises those three or a multiple of three poles of said stator windings which are not positioned adjacent to each other (Coles, Windings A, B, and C of Figure 2);

the stator windings being connected such that they can be driven by electric power of three phases.

However, it fails to disclose an inner rotor positioned within the outer stator and consisting of permanent magnets of eight poles and wherein said stator winding groupings comprising three poles of said stator windings, which are positioned as every other one of said stator windings and being connected in series.

Nishiyama et al. teach the construction of a motor having:

an inner rotor (13) positioned within an outer stator (2) and consisting of permanent magnets(14) of eight poles magnetized radially so that N and S poles are alternately arranged circumferentially; and

having a motor shaft (4) on which said permanent magnets of eight poles are circumferentially arranged, said motor shaft having solid form;
for the purpose of producing an inductance difference between the q-axis inductance and the d-axis inductance, so that it is possible to rotate and drive the rotor by making use of the reluctance torque.

Sakashita et al. teach the construction of an armature core winding method having stator winding groupings comprising three poles of said stator windings, which are positioned as every other one of said stator windings and being connected in series.

It would have been obvious to one skilled in the art at the time the invention was made to use the motor disclosed by Nishiyama et al. with the coil arrangement disclosed by Sakashita et al. on the electrical power assisted steering system disclosed by Coles for the purpose of

producing an inductance difference between the q-axis inductance and the d-axis inductance, so that it is possible to rotate and drive the rotor by making use of the reluctance torque.

4. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,351,050 to Coles in view of U.S. Patent No. 6,049,153 to Nishiyama et al., further in view of JP 02967340 to Kazuo.

Coles disclose the construction of an electrical power assisted steering system including an electric motor (50) comprising:

an annular outer stator (400) having circumferentially arranged stator windings (column 4, lines 26-27) of nine or a multiple of nine salient poles (401) radially arranged at an equal pitch, each of said salient poles having respective one of said stator windings wound therearound, three or a multiple of three poles of said stator windings being connected in series to provide three phases (Coles, Figure 3), each of said three phases comprises those three or a multiple of three poles of said stator windings which are not positioned adjacent to each other (Coles, Windings A, B, and C of Figure 2);

the stator windings being connected such that they can be driven by electric power of three phases.

However, it fails to disclose an inner rotor positioned within the outer stator and consisting of permanent magnets of eight poles and wherein each of the three phases comprises those three or a multiple of three poles of said stator windings, which are positioned adjacent to each other, connected in series.

Nishiyama et al. teach the construction of a motor having:

an inner rotor (13) positioned within an outer stator (2) and consisting of permanent magnets(14) of eight poles magnetized radially so that N and S poles are alternately arranged circumferentially; and having a motor shaft (4) on which said permanent magnets of eight poles are circumferentially arranged, said motor shaft having solid form; for the purpose of producing an inductance difference between the q-axis inductance and the d-axis inductance, so that it is possible to rotate and drive the rotor by making use of the reluctance torque.

Kazuo teach the construction of a motor having three phases comprising three or a multiple of three poles of said stator windings, which are positioned adjacent to each other, connected in series as shown in Figure 3b.

It would have been obvious to one skilled in the art at the time the invention was made to use the motor disclosed by Nishiyama et al. with the coil arrangement disclosed by Kazuo on the electrical power assisted steering system disclosed by Coles for the purpose of producing an inductance difference between the q-axis inductance and the d-axis inductance, so that it is possible to rotate and drive the rotor by making use of the reluctance torque.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (703) 308-4904. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor R. Ramírez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pedro J. Cuevas
June 27, 2003

